

Patent claims

1. Wobble drive, having

- a shaft (1);
- a pivot bearing (5) that is situated on the shaft (1) and is inclined in relation to an axis of rotation (7) of the shaft (1);
- a wobble finger (12) that extends away from the axis of rotation (7) of the shaft (1) and is held by the pivot bearing (5);

characterized in that at least one balance mass (20, 21) is fashioned on the shaft (1).

2. Wobble finger drive as recited in Claim 1, **characterized in that** the balance mass (20, 21) is situated on the shaft (1) in such a way that it counteracts the imbalance resulting from the design of the wobble drive.

3. Wobble drive as recited in Claim 1 or 2, **characterized in that**

- the pivot bearing (5) has an inner ring (5a) fashioned on the shaft (1) having an annular inner running surface (6) for roller elements (10), the inner running surface (6) being situated in a plane that does not stand perpendicular to the axis of rotation (7) of the shaft (1);
- a wobble ring (8), situated around the inner ring (5a), is allocated to the pivot bearing, said wobble ring having an outer running surface (9) for the roller elements (10) that is allocated to the inner running surface (6); and in that
- the wobble finger (12) extends from the wobble ring (8) radially to a center axis (13) of the wobble ring (8).

4. Wobble drive as recited in one of Claims 1 to 3, **characterized in that** the balance mass (20, 21) is capable of being manufactured by removing material from the shaft (1).

5. Wobble drive as recited in one of Claims 1 to 4, **characterized in that**

- the shaft (1) is mounted at at least two bearing points (3, 4);
- a balance mass (20, 21) is allocated to at least one of the bearing points (3, 4).

6. Wobble drive as recited in Claim 5, **characterized in that**

- the shaft (1) is mounted at two bearing points (3, 4); and in that
- a balance mass (20, 21) is allocated to each of the bearing points (3, 4).

7. Wobble drive as recited in Claim 6, **characterized in that** the axial distance (a) between a bearing point (3) and the balance mass (20) allocated thereto is minimal.

8. Wobble drive as recited in Claim 6 or 7, **characterized in that** the balance masses (20, 21) allocated to the two bearing points (3, 4) are situated opposite one another in relation to the axis of rotation (7) of the shaft (1).

9. Wobble drive as recited in one of Claims 1 to 8, **characterized in that** the wobble ring (8) is essentially rotationally symmetrical, with the exception of the area from which the wobble finger (12) extends.

10. Wobble drive, having

- a shaft (1);
- a pivot bearing (5) that is situated on the shaft (1) and is inclined in relation to an axis of rotation (7) of the shaft (1);
- a wobble ring (8) held by the pivot bearing (5);
- a wobble finger (12) that, at a linkage point (11), extends from the wobble ring (8) radially to a center axis (13) of the wobble ring (8);

characterized in that on the wobble ring (8) at least one balance mass (22, 23) is provided in an area that is situated neither at the linkage point (11) nor opposite the linkage point (11), in

relation to the center axis (13) of the wobble ring (8).

11. Wobble drive as recited in Claim 10, **characterized in that**

- the pivot bearing (5) has an inner ring (5a) fashioned on the shaft (1), having an annular inner running surface (6) for roller elements (10), the inner running surface (6) being situated in a plane that does not stand perpendicular to the axis of rotation (7) of the shaft (1); and in that
- the wobble ring (8) is allocated to the inner ring (5a), and has an annular outer running surface (9), allocated to the inner running surface (6), for the roller elements (10).

12. Wobble drive as recited in Claim 10 or 11, **characterized in that** two balance masses (22, 23) are provided that are situated opposite one another on the wobble ring (8), in relation to the center axis (13) of the wobble ring (8).

13. Wobble drive as recited in one of Claims 10 to 12, **characterized in that** two balance masses (22, 23) are provided, and in that the linkage point (11) stands at the same angular distance to the two balance masses (22, 23), in relation to the center axis (13) of the wobble ring (8).

14. Wobble drive as recited in one of Claims 10 to 13, **characterized in that**

- the one balance mass (22) is situated in an area of the wobble ring (8) that is offset by $+90^\circ$ relative to the linkage point (11) of the wobble finger (12), in relation to the center axis (13) of the wobble ring (8), and in that
- the other balance mass (23) is situated in an area of the wobble ring (8) that is offset by -90° relative to the linkage point (11) of the wobble finger (8), in relation to the center axis (13) of the wobble ring (8).

15. Wobble drive as recited in one of Claims 10 to 14, **characterized in that** the wobble ring (8) is essentially rotationally symmetrical, with the exception of the linkage point (11) from which

the wobble finger (12) extends and the areas in which the balance masses (22, 23) are provided.

16. Wobble drive as recited in one of Claims 10 to 15, **characterized in that** the balance mass (22, 23) is capable of being manufactured by removing material from the wobble ring (8).

17. Wobble drive as recited in at least one of Claims 1 to 9 and at least one of Claims 10 to 16.

18. Wobble drive as recited in one of Claims 1 to 17, **characterized in that** a balance mass (20, 21, 22, 23) is formed from a plurality of balance mass elements.